National Institute of Environmental Health Sciences

The health of Arctic populations: Does cold matter?

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Abstract:

The objective of the study was to examine whether cold climate is associated with poorer health in diverse Arctic populations. With climate change increasingly affecting the Arctic, the association between climate and population health status is of public health significance. The mean January and July temperatures were determined for 27 Arctic regions based on weather station data for the period 1961-1990 and their association with a variety of health outcomes assessed by correlation and multiple linear regression analyses. Mean January temperature was inversely associated with infant and perinatal mortality rate, age-standardized mortality rate from respiratory diseases, and age-specific fertility rate for teens and directly associated with life expectancy at birth in both males and females, independent of a variety of socioeconomic, demographic, and health care factors. Mean July temperature was also associated with infant mortality and mortality from respiratory diseases, and with total fertility rate. For every 10 degrees C increase in mean January temperature, the life expectancy at birth among males increased by about 6 years and infant mortality rate decreased by about 4 deaths/1,000 livebirths. Cold climate is significantly associated with higher mortality and fertility in Arctic populations and should be recognized in public health planning.

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Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Policymaker

Early Warning System: ☑

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Cold

Geographic Feature:

resource focuses on specific type of geography

Arctic

Geographic Location:

resource focuses on specific location

Non-United States, United States

Non-United States: Asia, Europe

Asian Region/Country: Other Asian Region

Other Asian Region: Arctic

European Region/Country: European Region

Other European Region: Arctic

Health Impact:

specification of health effect or disease related to climate change exposure

Developmental Effect, Injury, Respiratory Effect

Developmental Effect: Reproductive

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children, Low Socioeconomic Status

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content